INFORMATION REPORT

COUNTRY	USSR (Saratov Oblast)
SUBJECT	Ball Bearing Plant No. 3 in Saratov
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1. Ball Bearing Plant [redacted] is located on the western outskirts of Saratov (46°03'E/51°33'N) Saratov Oblast, west of an airfield. (1)

2. The war-damaged roof and walls of the power station in the old workshop were repaired in late 1945 and the shop was then ready for operation. Work on the construction of a new forge was started in June 1945 and continued at intervals. The skeleton of the building was completed in November 1948. The construction of a large new workshop was started in March 1946. The skeleton and most of the machine foundations were completed by November 1948. The machine tools for this building were stored in a workshop north of it. About 750 machines arrived by rail during August 1946. From blueprints and inscriptions on the machines it was learned that all machines came from the North German Ball Bearing Plant in Berlin.

3. The old production shop was partly equipped with new machine tools in early 1947. [redacted] 25X1
Twelve German fully automatic lathes were installed in Department No 13 which was the finishing shop for ball bearings 65-mm to 225-mm in diameter. Department No 15, the finishing shop for roller bearings 65-mm to 225-mm in diameter, received 10 additional German fully automatic lathes. By late 1948 the production had increased 30 percent over the 1945 production.

4. The civilian plant manager was Orlov (fnu). Tank and airforce inspectors had their offices in the administration building. Inspection groups frequently visited the plant. In October 1948 one of these groups was headed by a tank general.

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5. During the fall of 1940 the plant employed 2,800 Soviets in each of the two main shifts, and 1,500 Soviets in the third shift. Forty percent were women and 25 percent juveniles. Four hundred PWs were assigned as production workers and 600 PWs worked as construction and transport hands in one shift. [redacted]

6. [redacted] Ball bearings constituted fifty percent of the plant production. Other products were roller bearings and needle bearings. The bulk of the roller and ball bearings were produced for the construction of aircraft, tractors and tanks, and small quantities were produced for the construction of ships. The purpose of the needle bearings was not known. The daily rate of production, with three shifts working, was about 4,300 ball bearings, about 1,500 roller bearings, and about 600 needle bearings. (3)

7. The following data on the types and dimensions of the bearings were obtained [redacted]

Type:	Dimensions:	Production:
Ball bearings for tractors	Outer diameter of raceway: 150-mm to 220-mm; balls 6-mm to 25-mm in diameter	Bearings, 150-mm in diameter constituted 40 percent of the total output.
Tractor roller bearings (tank running gears)	Raceway 90-mm in diameter and 25-mm wide; roller diameter 20-mm	About 500 per day
Roller bearings for aircraft engines	Raceway 225-mm in diameter and 18 mm wide; roller diameter 12-mm	About 400 per day
Roller bearings for Ships	Raceway 2250mm in diameter and 200-mm long; roller diameter 22-mm	About 40 to 50 per day
Needle bearings	Raceway 20-mm to 30-mm in diameter, 25-mm to 35-mm long; needles 2-mm to 3-mm in diameter.	About 400 per day

8. [redacted] outer rings for tractor and tank bearings. These rings were further processed in the hardening shop. Most of these outer rings, [redacted] were produced for special roller bearings, and had an outside diameter of 110-mm, inside diameter of 65-mm and width of 22-mm. These bearings were to be installed in tank engines. Each bearing had 10 or 11 rollers. While the production quota was 120 outer rings per shift, the actual production per shift was 250 to 270 units. [redacted] The production quota was 110 units per shift, but the number of rings actually produced was 300 to 320. The type numbers had to be noted on the work sheets. The raceways for ball and needle bearings were made of steel . Roller bearings for ships were held by steel raceways. Tractor and tank roller bearings had brass raceways. Aircraft bearings were fitted in light metal and plastic raceways. The plastic raceways were die cast of peritnax in Department No 16.

9. Boxes of aircraft bearings were loaded on trucks by PWs, driven to the nearby airfield and loaded in three twin-engine aircraft which took off every day. [redacted] said that the aircraft bearings were flown to Moscow.

Some of the roller and ball bearings were shipped by rail to Stalingrad and small quantities were trucked to the Saratov Tractor Plant. Bearings for ships were sent to Astrakhan. No stores of bearings were observed and inspectors confirmed the fact that no stocks were kept at the plant.

10. Electricity was transmitted by a high-tension line from Saratov. The factory power station in the main plant building operated occasionally in the afternoon, when the power supply from Saratov was insufficient. A railroad connection entered the plant from the northwest and lead to the hoop-iron dump of the main plant building.

11. [redacted] Soviets repeatedly said that the machinery was improved and supplemented by German machines. The following firm plates were noticed on the machines: Intex, Schuette, Hasse, Trede, Kieserling-Solingen. It was also said that one complete factory installation came from Berlin-Boeskow, and that the operation of German machines, especially of the automatic spindle lathes, improved the work performance and increased the output.

12. New constructions at the plant included a forge and a production building (Producktionsgebaeude). The new production building was apparently in use as workers were observed leaving this building at the time of the shift change. The section for small ball bearings had 8 six-spindle lathes, 3 four-spindle lathes, 15 to 18 other lathes, 4 or 6 Intex machines, approximately 12 grinding machines and 10 polishing machines. When major repairs were required, the machines were dismantled and replaced by others to prevent delays in production. The machines, which were individually powered, were converted to an overhead transmission shaft after 1945.

13. By late 1949 the new forge and the large new production shop were completed and equipped with machinery. Excavations for the construction of one or two other new buildings in the southern plant area near the PW camp were started during the same time. Plant roads and a new railroad connection to the second production shop were still under construction. Large quantities of construction material were stored in the northern plant area. (4)

14. The plant had a total work force of 5,000 to 6,000 laborers. About 1,500 civilians, 50 percent of whom were women, worked in each shift. About 1,000 female conscripted laborers and 300 PWs did construction work in one shift.

[redacted] Comments:

(1) The location of Ball Bearing Plant No 3 west of the Saratov-West airfield was previously known.

(2) For sketch of the plant layout see Annexes 1 and 2. These sketches were submitted [redacted] and were confirmed [redacted]

(3) These statistics, although not confirmed, may be correct [redacted]

(4) The newly constructed workshop is [redacted] of the same size as the old one. It is believed that the operation of this workshop will considerably increase the plant production.

Attachments: Two
1. Layout sketch of the ball bearing plant.
2. Layout sketch of the main plant building.

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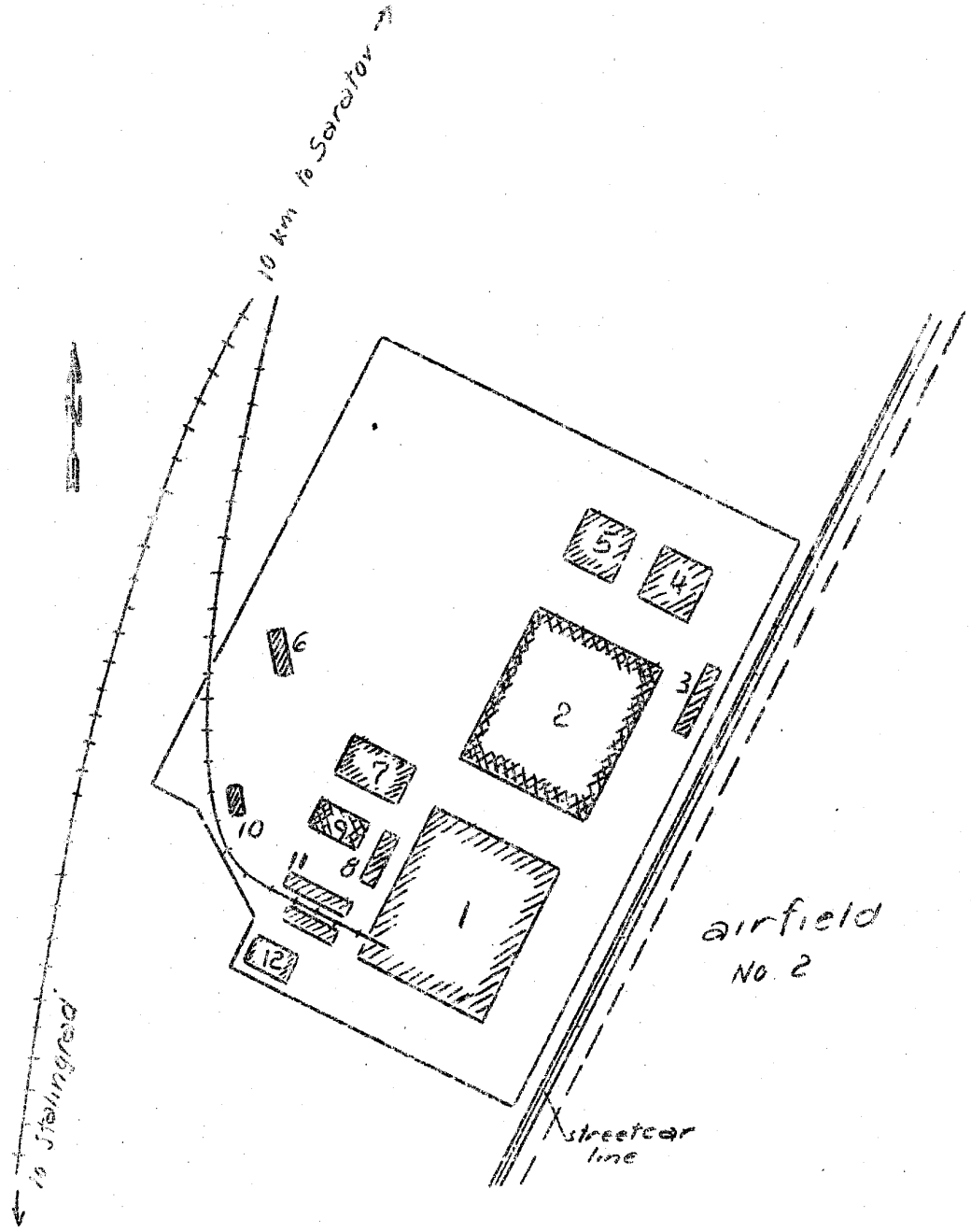
CENTRAL INTELLIGENCE AGENCY

Attachment 1

Ball Bearing Plant No. 3 in Saratov, Plant Layout



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Attachment 1

Legend:

1. Old workshop, concrete structure with skylights, 300 x 250 x 25 meters. The eastern section was 30 meters high.

2. New workshop under construction, 300 x 250 x 25 meters.

3. Plant guard quarters, 125 x 25 x 6 meters.

4. Machine shop and fitting shop, concrete structure, 100 x 100 x 8 meters. No details were known.

5. Machine shop and fire department, concrete building, 100 x 100 x 12 meters, used to store about 750 dismantled German machines, most of them from the North German Ball Bearing Plant in Berlin.

6. Warehouse, 72 x 25 meters in which steel rods, 3 to 6 meters long, 65-mm to 200-mm in diamter, were stored.

7. Forge, concrete building, 125 x 75 x 12 meters, equipped with eight large hot-processing press-cutting machines, four small hot-processing press-cutting machines, 15 gas-fired annealing furnaces and one large and three small pneumatic hammers, used in processing slugs for rings.

8. Boiler house, 100 x 25 meters, with four gas-fired boilers.

9. New forge, 100 x 50 x 12 meters, construction discontinued. No equipment was installed.

10. Carpenter shop, 50 x 25 x 6 meters. Packing crates were manufactured here. No details were known.

11. Two warehouses 125 x 25 and 100 x 25 meters with loading ramps used to store finished products.

12. PW Camp No 7365/5.

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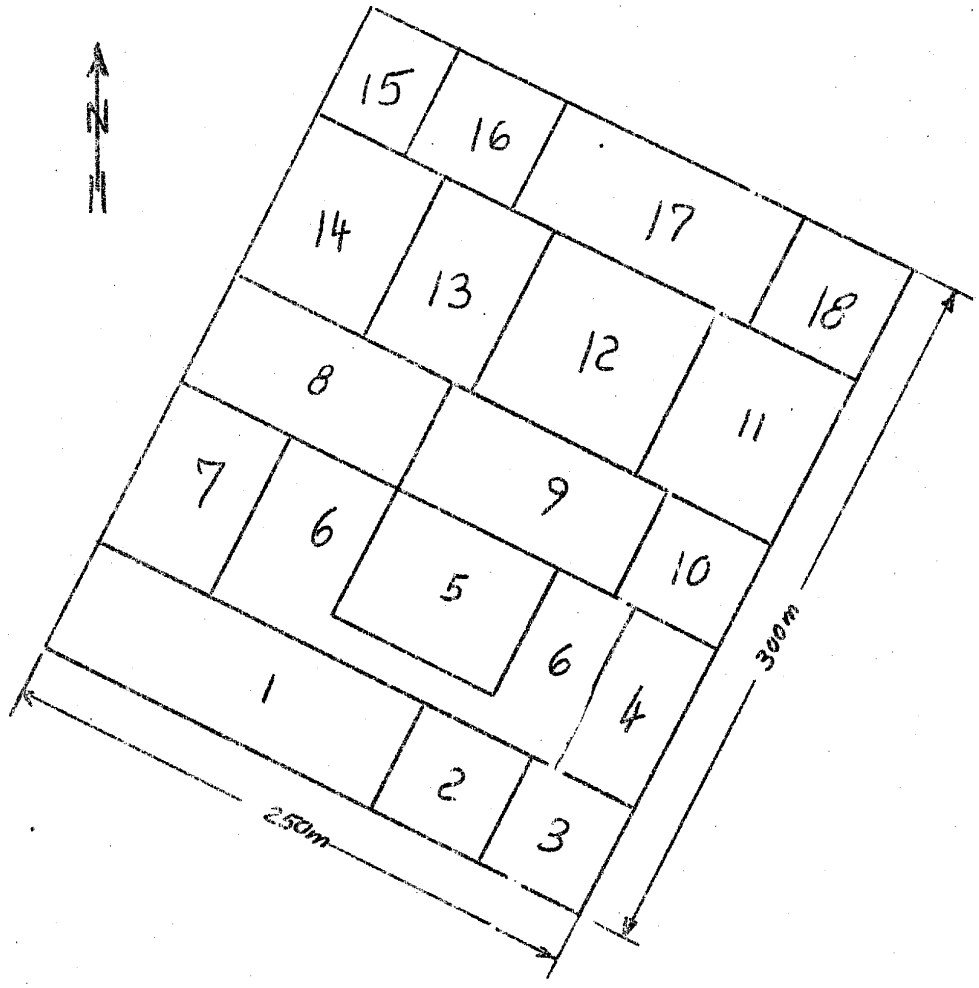
CENTRAL INTELLIGENCE AGENCY

Attachment 2

Saratov Ball Bearing Plant No. 3, Main Plant Building.



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Legend:

1. Warehouse, 150 x 50 meters, used to store hoop-iron, 60-mm to 220-mm wide, 1-mm to 5-mm thick and rolled in 50 meters lengths, iron rods, 3 to 5 meters long, 10-mm to 25-mm in diameter; and brass bars.

2. Power station, 50 x 50 meters, equipped with two auxiliary steam-powered turbines and generators.

3. "Shirpotreb" 50 x 50 meters. Pots, dishes and other household utensiles were manufactured from waste material. The equipment of this section was not known.

4. Assembly and inspection department, 75 - 40 meters, equipped with several hand operated presses.

5. Department No 13, 75 x 50 meters, equipped with about 25 lathes, 10 semi-automatic machines, 30 ring grinding machines, and five polishing machines. Ball bearings, 65-mm to 225-mm in diameter, were finished in this department.

6. Department No 15, 160 x 75 meters, equipped with 20 lathes, 20 semi- automatic machines, 30 ring grinding machines, and 10 polishing machines. Roller bearings, 65-mm to 225-mm in diameter, were finished in this department.

7. Department No 1, 75 - 50 meters, equipped with 14 Pittler automatic spindle lathes, 30 smaller automatic machines, 40 ring grinding machines, and 15 polishing machines. Ball bearings, 25-mm to 65-mm, were finished in this department.

8. Department No 12 a, 100 x 50 meters, equipped with 18 to 20 electric annealing furnaces. Rings and balls were annealed in this department.

9. Department No 12 b, 100 x 50 meters, hardening shop for rings, with four electric hardening furnaces with oil bathes, hardening process 20 minutes.

10. Department No 16, 50 meters square, manufactured plastic raceways for ball bearings and was equipped with eight die casting machines and several electric drying furnaces. Raw materials for the production of pertinax were paper and a yellow powder.

11. Department No 25, 75 x 65 meters. This was a lathe and grinding shop equipped with 25 lathes, 25 other cylindrical grinding machines, 10 inner cylindrical grinding machines, 8 surface grinding machines and 2 boring machines.

12. Department No 24, 75 meters square. equipped with 20 Fiat automatic lathes and 15 roller grinding machines. This department produced rollers.

13. Department No 14, 75x50 meters equipped with two hot-processing press-cutting machines, 4 cold-processing press-cutting machines, 16 filing machines and 14 grinding machines. This department produced balls.

14. Department No 10, 75 x 60 meters, equipped with eight large automatic press-cutting machines and 15 small automatic press-cutting machines. Raceways for bearings were produced in this departments.

15. Department producing grinding stones for plant requirements, 50 x 40 meters. No details were known.

16. Hardening shop for balls and rollers. This shop was 50 meters square and was equipped with six electric hardening furnaces.

17. Tool hardening shop, 110 x 50 meters, equipped with two gas-fired and 12 electric hardening furnaces and two gas-heated hardening baths.

13. Foundry, 50 x 50 meters, equipped with one gas-fired smelting furnace of 2.5 tons capacity, and two brass smelting furnaces. This foundry cast slugs for raceways.

The east section of the building, reaching from "Shirpotrep" to the foundry, had a second floor, 30 meters wide, with offices. This section of the building was 30 meters high.